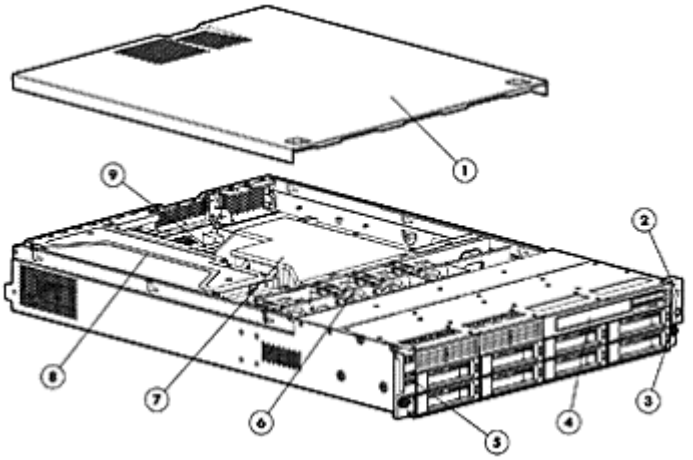
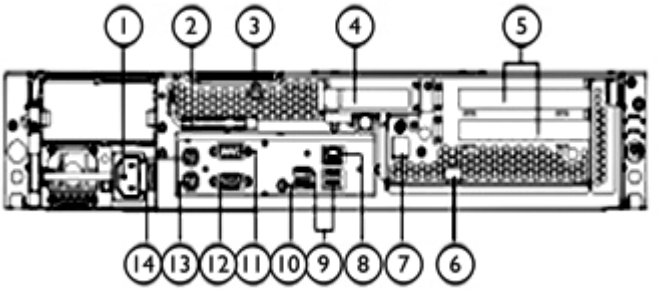
Overview





Front View:

1. Access panel
2. Front LED Indicators
3. Power on/off
4. Optional DVD-RW or DVD-ROM drive
5. Front USB Ports (2)
6. Non-Hot Plug Non Redundant fans (4 fans)
7. Air Baffle
8. PCI Cage
9. System Board

Rear View:

1. Power Supply Cable Socket
2. T-15/T-10 Screwdriver
3. Thumbscrew For Top Cover
4. Low Profile Card Slot
5. PCI Expansion Card Slot
6. Thumbscrew For PCI Cage
7. HP LO100c Management Card Port (Optional)
8. LAN Port
9. 4 USB 2.0 Ports
10. UID LED Button
11. Serial Port
12. VGA Port
13. PS/2 Mouse Port (green)
14. PS/2 Keyboard Port (purple)

What's New

- Support for SAS Hot Plug Enterprise(ENT) Hard Drives
- Support for SATA Hot Plug Midline (MDL) Hard Drives

At A Glance

The HP ProLiant DL180 G5 is a low cost high capacity storage optimized 2-way server that delivers on a history of design excellence and 2U density for a variety of rack deployments and applications.

- Processors:
  - Supports up to two Quad-Core Intel® Xeon® processors: 5400 sequence with 12MB Level 2 cache
  - Intel® 5100 Chipset
- Memory:
  - Up to 24 GB of memory supported by six (6) PC2-5300 (667 MHz) DDR2 memory slots
- Internal Drive Support:
  - Supports up to twelve via CTO with controller or up to eight via BTO with the addition of a controller:
    - Hot Plug Serial ATA (SATA) 3.5"hard drives; or

Overview

- Hot Plug Serial Attached SCSI (SAS) 3.5"hard drives
  NOTE: 4 hard drives are supported standard via BTO. 8 hard drive support requires the addition of a Smart Array or HBA controller. Hot Plug and SAS functionality require the addition of a Smart Array or HBA controller. 12 hard drive support available via CTO only and requires a SAS controller that supports expanders.
- Internal storage capacity:
  - SATA Models: Up to 12.0TB (12 x 1TB Hot Plug 3.5" hard drives)
  - SAS Model: Up to 12.0TB (12 x 1TB Hot Plug 3.5" hard drives)

- Network Controller:
  - One integrated NC105i PCI-e Gigabit NIC (embedded) (Wake on LAN and PXE capable)
- Storage Controllers:
  - HP Embedded SATA RAID Controller (up to 4 hard drive support on standard BTO models)
    NOTE: Transfer rate 1.5 Gb/s SATA
- Expansion Slots:
  - One available Low Profile x8 PCI-Express slot using a Low profile Riser.
  - Two Full Height/ Full Length Riser options
    - Option1: 2 full-length/full-height PCI-Express x8 connector slots (x4 electrical - Standard)
    - Option2: full-length/full-height riser with 2 PCI-X Slots(Optional)
- Infrastructure Management:
  - Optional HP Lights Out 100c Remote Management card with Virtual KVM and Virtual Media support (includes IPMI2.0 and SMASH support)
- USB Ports:
  - Seven USB ports (2) front, (4) rear, (1) internal
- Optical Drive:
  - Support for one:
    - Optional Multi-bay DVD
    - Optional Floppy (USB only, USB key)
- Power Supply:
  - 750W Power Supply (Optional Redundancy Hot Plug, Autoswitching) CSCI 2007/8
  - 1200W High Efficiency Power Supply (Optional Redundancy Hot Plug, Autoswitching) (Optional) CSCI 2007/8
    - NOTE: Climate Savers Computing Initiative, 2007-2008 Compliant
- Form Factor:
  - 2U rack models
- Deployment/Serviceability:
  - Tooled access to all system components for easy in rack serviceability
  - Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement
- Warranty:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and repair is available for one year from date of purchase (3-1-1 warranty in AP and Brazil). Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
  - NOTE: Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year (3-1-1-in AP and Brazil) Onsite support (3-1-1-in AP and Brazil) with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features

NOTE: For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: http://h71028.www7.hp.com/ERC/downloads/4AA1-2747EEW.pdf
NOTE: For the Standard Features shipped in the Factory Integrated Models, please see the "Configuration Information - Factory Integrated Models" section.

Processor One of the following depending on Model	Quad-Core Intel® Xeon® processor L5420 (2.50 GHz, 50W, 1333MHz FSB) NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Quad-Core Intel® Xeon® processor L5410 (2.33 GHz, 50W, 1333MHz FSB) NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Quad-Core Intel® Xeon® processor E5450 (3.0 GHz, 80W, 1333MHz FSB) NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Quad-Core Intel® Xeon® processor E5440 (2.83 GHz, 80W, 1333MHz FSB) NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Quad-Core Intel® Xeon® processor E5430 (2.66 GHz, 80W, 1333MHz FSB) NOTE: Available through Configure To Order only. See Factory Integration Models section for more details. Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80W, 1333MHz FSB) Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 80W, 1333MHz FSB) Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 65W, 1066MHz FSB) NOTE: Available through Configure To Order only. See Factory Integration Models section for more details.
Upgradeability	Upgradeable to two processors
Chipset	Intel® 5100 Chipset
Cache Memory	12MB (2 x 6MB) Level 2 cache (5400 sequence)
Memory Protection	Registered Advanced ECC memory

Memory	Type	PC2-5300 DIMMs (DDR2-667)	
	Standard	1 GB	(1 x 1 GB)
	Maximum	24 GB	(2 x 8 GB) + (4 X 2 GB) NOTE: Two 8 GB DIMMs should be populated in sockets 1 and 2 first (the right most sockets when looking from the front of the chassis) - sockets 4 through 6 should be populated with 2 GB DIMMs. (Refer to hood label for more information)

Standard Features

Network Controller	One NC105i PCI-E Gigabit NIC (embedded) (Wake on LAN and PXE capable)

Expansion Slots

Slot Number	Bus Speed	Bus Number*	Device Number**	Hot Plug (Y/N)	PCI Voltage	Notes
3	x8 PCI-Express	3	1	N	3.3 volts	Low Profile
1	x4 PCI-Express	5	0	N	3.3 volts	Full Length Full Height
2	x4 PCI-Express	6	0	N	3.3 volts	Full length Full Height
1	PCI-X***	Dynamic	1	N	3.3 volts	Full Length Full Height
2	PCI-X***	Dynamic	2	N	3.3 volts	Full Length Full Height

NOTE: All slots can accept universal keyed PCI cards

* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

*** PCI-X bus speed will be 133MHz when only one PCI-X card is installed. It will be 100MHz when both slots have PCI-X cards installed.

Storage Controller	4HDD Models	HP Embedded SATA RAID Controller (integrated into the south-bridge) supporting SW RAID 0,1 NOTE: Transfer rate 1.5 Gb/s SATA.

NOTE: A diskette drive is needed to install storage controller drivers during a Windows operating system installation from a CD.

Storage	Diskette Drives	Via USB only
	Optical Drives	Optional HP Slim SATA DVD-ROM Optical Drive Optional HP Slim SATA DVD RW Optical Drive NOTE: Optical drives can only be installed on 8 bay hard drive models.
	Drive Bays	Up to 12 Hot Plug SAS/SATA 3.5" drives (4 drive bays standard) NOTE: 4 Drive Models are Non-Hot Pluggable. Smart Array Controller must be added for Hot Plug drive capability. 4 Drive Models can be upgraded with the addition of a Smart Array Controller and a SAS/SATA Multi-lane cable (464830-B21). 12 Drive Model available via CTO factory integration ONLY. NOTE: The addition of a Smart Array Controller requires the addition of a SAS/SATA Multi-lane cable (464830-B21)

Maximum Internal Storage	Hot Plug SATA	12.0TB	12 x 1TB
	Hot Plug SAS	12.0TB	12 x 1TB

Standard Features

Interfaces	Parallel	None
	Network RJ-45 (Ethernet)	1 10/100/1000 NIC port (plus 1 optional for the HP ProLiant Lights Out 100c Remote Management Card)
	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	USB	7 total ports: (2) front, (4) rear, (1) internal NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.
Graphics	32MB shared supporting 1600 x 1200 x 16M resolution.	
Form Factor	Rack (2U), (3.5 in/8.89 cm)	
Remote Management	Lights-Out 100c	Lights Out LO100c is a family of Remote Management Card (RMC) for HP ProLiant 100 series servers that do not have embedded LO100i. The LO100c has all the features of the LO100i Advanced license and allows customers, or their service providers, to remotely manage ProLiant servers over a LAN or the Internet from anywhere, anytime regardless whether the server is located in the same building, across town, or around the globe. With LO100c, users can acquire complete remote control with Virtual KVM (graphical hardware-based, remote console). Users can also access the server's serial console, control system power, update system firmware and software, as well as monitor system environmental conditions. The LO100c remote management card can be accessed from a web browser or command line interface. This virtual "at-the-server" functionality means administrators stay in control of remote HP ProLiant 100 series servers. The HP Lights-Out100c consists of a management processor and firmware that provides cost-effective, entry-level lights-out functionality, basic system board management functions, and diagnostics. NOTE: For more information, please refer to the QuickSpecs for the LO100c found at:: http://h18004.www1.hp.com/products/servers/management/remotemgmt/lightsout100/index.html

Standard Features

Industry Standard Compliance	ACPI V2.0 Compliant PCI 2.2 Compliant PXE Support WOL Support Microsoft® Logo certifications IPMI 2.0 Compliant
Manageability	The optional HP PL100 G5 Lights-Out 100c Kit ALL provides the following OS-independent remote control capabilities with a riser card: • Virtual power • System event log access • System health • Remote Serial console (serial redirection) • Browser, Telnet access • SMASH-CLP compliant • IPMI 2.0 compliant • Virtual media (Floppy, CD, USB 2.0 (with release 3.0) • Secure Socket Layer Encryption • Secure Shell Encryption • Virtual KVM
Security	Power-on password Setup password
Server Power Cords	One Highline IEC Power cord ships standard (for connection to a Power Distribution Unit) NOTE: HP ProLiant DL servers no longer ship standard with NEMA power cords that allow connection to 110V US wall outlets in a home or office. HP ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord If a user wishes to power a ProLiant DL server using a110V receptacle (NEMA-15), the NEMA power cord (AF556A) must be ordered separately. If a local power cord is required, please reference the following power cord matrix: http://www.hp.com/go/powercordmatrix. NOTE: Rack models ship standard with an IEC cable. Localized cables included with geographic specific models in other world regions.
UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

Standard Features

Power Supply	750Watts - (Hot Plug, Autoswitching) Ships Standard 1200Watts - High Efficiency 12V Hot Plug AC Power Supply (Autoswitching) (Optional) 750Watts - Power Supply (Redundant Hot Plug, Autoswitching) (Optional) 1200Watts - High Efficiency Power Supply (Redundant Hot Plug, Autoswitching), CSCI 2007/2008 (Optional) NOTE: Climate Savers Computing Initiative, 2007-2008 Compliant NOTE: For additional information please see the Options section of this QuickSpecs.
System Fans	4 system fans ship standard; Non-hot plug, Non-redundant
OS Support	Microsoft Windows 2003 R2 Microsoft Windows Server 2008 Microsoft Windows Small Business Server 2008 Microsoft Windows Essential Server 2008 Red Hat Enterprise Linux SUSE Linux Enterprise Server Sun Solaris for x64/x86-based Systems NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/supportos and our driver download page http://www.hp.com/support/DL180G5
Rack Airflow Requirements	Rack 10000 G2 series Cabinets The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.
Rack Kit	HP ProLiant DL180 rack models have fixed rails which provide support for round or square mounting holes, including Compaq/HP 7000, 9000, 10000 and HP series), with an adjustment range of 26" - 36".

Standard Features

Telco Rack Support	Support for all 2- and 4 post Telco racks and threaded hole racks requires an additional option kit from Rack Solutions. The Rack Solutions brackets can be purchased at: http://www.racksolutions.com/hp.
Factory Express Portfolio for Servers and Storage	HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.
HP Enterprise Configurator	The HP eConfigure Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.
Service and Support	HP services provide total care and support expertise with committed response designed to meet your IT and business needs. HP Care Pack services include coverage for the HP branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3kVA; these items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack. To fully capitalize on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions provides a range of support services designed to meet the varying needs of business. Whether an SMB or large global corporation HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime. Recommended Service – Simplify ProLiant solution implementation, maintenance and management. • Support Service – 3 Year, 9x5 Next Business Day coverage, excluding HP holidays only • Deployment Service – Hardware Installation only Enhanced Service – Optimize service level to increase IT performance and availability • Support Service – 3 Year 13x5 Same Business Day, 4-Hour response coverage • Deployment Service – Installation and Start-up only Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays.

For a complete listing of service offerings and information visit:
http://www.hp.com/services/proliantservices
http://www.hp.com/go/proliant/carepack

Four Drive Serial ATA (SATA) Models

NOTE: To upgrade from 4 Non-Hot Plug SATA hard drives to 4 Hot Plug SATA/SAS hard drives the addition of a storage controller and one Internal SATA/SAS cable (464830-B21) are required. To upgrade to 8 Hot Plug SATA/SAS hard drives, the addition of a storage controller and two Internal SATA/SAS cables (464830-B21) are required.
NOTE: To upgrade to server models supporting 12 hard drives; you must start with HP ProLiant DL180 G5 CTO Chassis (P/N 457649-B21). Please see the Configuration To Order section below.

HP DL180 G5, E5420 2.50GHz,(QC) 1GB (1P) 456830-001	Processor One of the following depending on model	Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80W, 1333 MHz FSB) Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 80W, 1333 MHz FSB)
HP DL180 G5, E5405 2.00 GHz,(QC) 1GB (1P) 456831-001	Cache Memory	12MB (2 x 6MB) Level 2 cache (5400 sequence)
	Memory	1 GB (1 x 1 GB) PC2-5300 DIMMs (DDR2-667) with Advanced ECC capabilities
	Network Controller	One HP NC105i PCI-E (embedded)
	Storage Controller	Embedded SATA Raid Standard
	Hard Drive	None ship standard (up to 8 Hot Plug SATA or SAS drives supported standard with the addition of a controller and cable. 12 drive models supported via CTO only.)
	Internal Storage	BTO internal storage capacity of up to: 8.0TB (8 x 1TB Hot Plug 3.5" SATA hard drives) 8.0TB (8 x 1TB Hot Plug 3.5" SAS hard drives)
	Optical Drive	DVD-ROM, DVD RW (Optional)
	Form Factor	Rack (2U)
		NOTE: Server models supporting 4 hard drives are Non-Hot Pluggable. Smart Array Controller must be added for Hot Plug drive capability. NOTE: SAS (Serial Attach SCSI) capability requires the addition of a Smart Array or HBA Controller card.

Smart Buys

S-BUY DL180G5 E5440 2P, 12 HDD Bays 470064-747	Processor(s)	(2) Quad-Core Intel® Xeon® processor E5440 (2.83 GHz, 80 W, 1333 MHz FSB)
	Cache Memory	12MB (2 x 6MB) Level 2 cache (5400 sequence)
	Memory	4GB (2 x 2GB) PC2-5300 DIMMs (DDR2-667)with ECC capabilities
	Network Controller	One HP NC7781 (embedded) (Wake on LAN and PXE capable)
	Storage Controller	Smart Array P400/256MB Controller
	Hard Drive	None ship standard (up to 12 Hot Plug SATA or SAS drives supported standard)
	Internal Storage	Internal storage capacity of up to 9TB (12 x 750GB Hot Plug 3.5" SATA hard drives), 3.6TB (12 x 300GB Hot Plug 3.5" SAS hard drives)
	Power Supplies	2 x 750W Redundant Power
	Optical Drive	None
	Server Management	HP Lights-Out 100c Remote Management Card
	Form Factor	Rack Mount (2U)
S-BUY DL180G5 E5420, 1P, 8 HDD Bays 470064-745	Processor(s)	(1) Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80 W, 1333 MHz FSB)
	Cache Memory	12MB (2 x 6MB) Level 2 cache (5400 sequence)
	Memory	2GB (2 x 1GB) PC2-5300 DIMMs (DDR2-667)with ECC capabilities
	Network Controller	One HP NC7781 (embedded) (Wake on LAN and PXE capable)
	Storage Controller	Smart Array E200/128 BBWC Controller
	Hard Drive	None ship standard (up to 8 Hot Plug SATA or SAS drives supported standard)
	Internal Storage	Internal storage capacity of up to 6TB (8 x 750GB Hot Plug 3.5" SATA hard drives), 3.2TB (8 x 300GB Hot Plug 3.5" SAS hard drives)
	Optical Drive	DVD-RW
	Server Management	HP Lights-Out 100c Remote Management Card
	Form Factor	Rack Mount (2U)

S-BUY DL180G5 E5420 2P 464506-005	Processor(s)	(2) Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80 W, 1333 MHz FSB)*
	Cache Memory	12MB (2 x 6MB) Level 2 cache (5400 sequence)
	Memory	2GB (2 x 1GB) PC2-5300 DIMMs (DDR2-667)with ECC capabilities
	Network Controller	One HP NC7781 (embedded) (Wake on LAN and PXE capable)
	Storage Controller	Smart Array E200/128 BBWC Controller
	Hard Drive	None ship standard (up to 8 Hot Plug SATA or SAS drives supported standard. 12 drive models supported via CTO only.)
	Internal Storage	Internal storage capacity of up to 9TB (8 x 750GB Hot Plug 3.5" SATA hard drives), 3.2TB (12 x 300GB Hot Plug 3.5" SAS hard drives)
	Optical Drive	DVD-ROM
	Server Management	HP Lights-Out 100c Remote Management Card
	Form Factor	Rack Mount (2U)

Smart Buys

The ProLiant Smart Buy program offers a collection of promotional server and option products that are configured with SMB in mind, offered at discounted prices, and positioned for quick delivery. Smart Buy server offers are available for a limited time only.

S-BUY DL180G5 E5405 464505-005	Processor(s)	(1) Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 80 W, 1333 MHz FSB)
	Cache Memory	12MB (2 x 6MB) Level 2 cache
	Memory	1GB (1 x 1GB) PC2-5300 DIMMs (DDR2-667)with ECC capabilities
	Network Controller	One HP NC7781 (embedded) (Wake on LAN and PXE capable)
	Storage Controller	Smart Array E200/128 BBWC Controller
	Hard Drive	None ship standard (up to 8 Hot Plug SATA or SAS drives supported standard.
	Internal Storage	Internal storage capacity of up to 9TB (8 x 750GB Hot Plug 3.5" SATA hard drives)
	Optical Drive	DVD-ROM
	Server Management	HP Lights-Out 100c Remote Management Card
	Form Factor	Rack Mount (2U)

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above.
Configure-to-order servers must start with a CTO Chassis.
NOTE: FIO indicates that this option is a Factory Installable Option.

Step 1: Base Configuration (choose one of the following configurable models)

Hot Plug Models

HP ProLiant DL180 G5 Hot Plug SAS/SATA Rack CTO Chassis	457649-B21

Factory Integrated Model ships with:

One embedded NC105i PCI-E Gigabit Server Adapters (WOL & PXE-capable)

Three available PCI-Express slots:

Slot 1: x8 low-profile/half-height slot

Slot 2 & 3: x4 Full-Height/Full Length

NOTE: Optional PCI-X option kit includes: Slot 1 and 2: full-length/full-height PCI-X 100. PCI-X slots are 64 bits; 133 MHz capable if only one PCI-X card is installed in the server.

One HP SATA Embedded Cable Kit

750 Watt Power Supply

One Highline IEC Power Cord

4 Non-Hot Plug Fans

Rack (2U), (3.5 in/8.89 cm)

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

Processors	Quad-Core Intel® Xeon® processor L5420 (2.50 GHz, 50W, 1333MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 487901-L21 and one 487901-B21.	487901-L21
	Quad-Core Intel® Xeon® processor L5410 (2.33 GHz, 50W, 1333MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 491310-L21 and one 491310-B21.	491310-L21
	Quad-Core Intel® Xeon® processor E5450 (3.0 GHz, 80W, 1333MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 499047-L21 and one 499047-B21.	499047-L21
	Quad-Core Intel® Xeon® processor E5440 (2.83 GHz, 80W, 1333MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 466106-L21 and one 466106-B21.	466106-L21
	Quad-Core Intel® Xeon® processor E5430 (2.66 GHz, 80W, 1333MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 458784-L21 and one 458784-B21.	458784-L21
	Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80W, 1333MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 458785-L21 and one 458785-B21.	458785-L21

	Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 80W, 1333MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 458786-L21 and one 458786-B21.	458786-L21
	Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 65W, 1066MHz FSB) Kit, FIO NOTE: If 2 processors are desired, select one 458787-L21 and one 458787-B21.	458787-L21
Memory	1 GB PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
	1 GB REG PC2-5300 1 x 1 GB Kit	462483-B21
	2 GB REG PC2-5300 2 x 1 GB Low Power Single Rank Kit	483399-B21
	2 GB REG PC2-5300 2 x 1 GB Single Rank Kit	408851-B21
	4 GB REG PC2-5300 2 x 2 GB Single Rank Kit	461840-B21
	4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit	408853-B21
	8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit	408854-B21
	8 GB REG PC2-5300 2 x 4 GB Low Power Dual Rank Kit NOTE: Dual Rank DIMMs are supported in slots 1 to 4. See the memory population matrix in the Memory section of this QuickSpecs.	483403-B21
Hard Drive Cage	HP DL180 8HDD Cage FIO Kit	451368-B21
	HP DL180 12HDD Cage FIO Kit	451369-B21
	NOTE: The installation of a 12HDD Cage requires the addition of a 4-port SAS controller that supports expanders. A Smart Array Controller, P400 or better, is recommended. NOTE: The addition of a Smart Array Controller (or 4-port SAS controller that supports expanders) requires the addition a SAS/SATA Multi-lane cable (464830-B21).	

Step 3: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.

Core Options

NOTE: Some options may not be available for factory integration. Please contact an HP sales representative for additional information.

Unique Options	HP ProLiant DL180 PCI/X Riser Kit NOTE: This option kit replaces the three internal expansion slots listed in step 1 base configuration. NOTE: Optional PCI-X option kit includes: Slot 1: full-length/full-height PCI-X 100; Slot 2: Full length/Full-height PCI-X 100. PCI-X slots are 64 bits; 133 MHz capable if only one PCI-X card is installed in the server.	451285-B21
Processor	Quad-Core Intel® Xeon® processor L5420 (2.50 GHz, 50W, 1333MHz FSB) Option Kit	487901-B21
	Quad-Core Intel® Xeon® processor L5410 (2.33 GHz, 50W, 1333MHz FSB) Option Kit	491310-B21
	Quad-Core Intel® Xeon® processor E5450 (3.0 GHz, 80W, 1333MHz FSB) Option Kit	499047-B21
	Quad-Core Intel® Xeon® processor E5440 (2.83 GHz, 80W, 1333MHz FSB) Option Kit	466106-B21
	Quad-Core Intel® Xeon® processor E5430 (2.66 GHz, 80W, 1333MHz FSB) Option Kit	458784-B21
	Quad-Core Intel® Xeon® processor E5420 (2.50 GHz, 80W, 1333MHz FSB) Option Kit	458785-B21
	Quad-Core Intel® Xeon® processor E5405 (2.00 GHz, 80W, 1333MHz FSB) Option Kit	458786-B21
	Dual-Core Intel® Xeon® processor E5205 (1.86 GHz, 65W, 1066MHz FSB) Option Kit	458787-B21
Memory	1 GB REG PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
	1 GB REG PC2-5300 1 x 1 GB Kit	462483-B21
	2 GB REG PC2-5300 2 x 1 GB Low Power Single Rank Kit	483399-B21
	2 GB REG PC2-5300 2 x 1 GB Single Rank Kit	408851-B21
	4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit	408853-B21
	4 GB REG PC2-5300 2 x 2 GB LP Single Rank Kit	461840-B21
	8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit	408854-B21
	8 GB REG PC2-5300 2 x 4 GB Low Power Dual Rank Kit NOTE: Dual Rank DIMMs are only supported in slots 1 and 2. See the memory population matrix in the Memory section of this QuickSpecs.	483403-B21
Optical Drives	HP Slim SATA DVD-ROM Optical Drive	481041-B21
	HP Slim SATA DVDRW Optical Drive NOTE: Optical drives can only be installed on 8 bay hard drive models.	481043-B21

Core Options

Hard Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	SATA Hot Plug 3.5" Midline (MDL) Drives	
	HP 1TB 3G SATA 7.2K 3.5" MDL HDD	454146-B21
	HP 750GB 3G SATA 7.2K 3.5" MDL HDD	458930-B21
	HP 500GB 3G SATA 7.2K 3.5" MDL HDD	458928-B21
	HP 250GB 3G SATA 7.2K 3.5" MDL HDD	458926-B21
	SATA Hot Plug 3.5" Entry (ETY) Drives	
	HP 160GB 3G SATA 7.2K 3.5" ETY HDD	458945-B21
	NOTE: Server BIOS update is required to support 3G SATA drives when configured with embedded SATA controller. Please see communication for details: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c01511475	
	NOTE: Please see the QuickSpecs for Technical Specifications and additional specifications: http://h18000.www1.hp.com/products/quickspecs/13021_na/13021_na.html	
	SATA Hot Plug 3.5" Midline (MDL) Solid State Drives	
	HP 60GB 3G SATA 3.5in MDL 1y Wty SSD	570761-B21
	HP 120GB 3G SATA 3.5in MDL 1y Wty SSD	570763-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13415_na/13415_na.html	
	SAS Hot Plug 3.5" Midline (MDL) Drives	
	HP 1TB 3G SAS 7.2K 3.5" DP MDL HDD	461137-B21
	HP 750GB 3G SAS 7.2K 3.5" DP MDL HDD	461135-B21
	SAS Hot Plug 3.5" Enterprise (ENT) Drives	
	HP 600GB 6G SAS 15K 3.5" DP ENT HDD	516828-B21
	HP 450GB 6G SAS 15K 3.5" DP ENT HDD	516816-B21
	HP 450GB 3G 15K 3.5" DP SAS ENT HDD	454232-B21
	HP 300GB 6G SAS 15K 3.5" DP ENT HDD	516814-B21
	HP 300GB 3G SAS 15K 3.5" DP HDD	416127-B21
	HP 146GB 3G SAS 15K 3.5" DP HDD	384854-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.html	
	NOTE: If selecting more than 4 hard drives or if using SAS hard drives a Smart Array controller and two SAS/SATA cables (P/N 464830-B21) are required.	

Core Options

Communications	HP NC110T PCI Express Gigabit Server Adapter NOTE: Does not support Windows 2000.	434905-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter NOTE: Does not support Windows 2000.	435508-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter NOTE: Supported on a Full Length-Full Height slot only.	394795-B21
	HP NC522SFP Dual Port 10GbE Server Adapter NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each NC522SFP adapter. NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.	468332-B21
Power Supplies	750W Redundant Power Supply Kit	451366-B21
	High Efficiency HP 1200W 12V Hot Plug AC Power Supply NOTE: Redundant Power Supply configuration for 1200W power supply requires both power supplies to be 1200W. The 1200W and 750W power supplies cannot be mixed.	437572-B21

Additional Options

Remote Management	Lights-Out 100c Remote Management Card	
	HP Lights Out 100c Remote Management Card 100c Kit	445513-B21
	NOTE: For more information regarding Lights Out 100c Remote Management Card, please see the following URL: http://www.hp.com/servers/proliantessentials.	
HP Insight Software	HP Insight Rapid Deployment software	
	HP Insight Rapid Deployment software No Media 1-Server License including 1 year of 24x7 Technical Support and Updates	452151-B21
	NOTE: This license allows 1 server to be deployed. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.	
	NOTE: For additional license kits including electronic delivery options, please see the RDP QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.html	
Storage Controllers	SAS Controllers	
	HP Smart Array E200 Controller	
	HP Smart Array E200/128 BBWC Controller	411508-B21
	HP Smart Array E500 Controller	
	HP Smart Array E500/256MB Controller	435129-B21
	NOTE: When ordering a Smart Array E500 Controller with BBWC the addition of the HP SA-P400 and SA-E500 24" Battery Cable Kit (417836-B21) is required.	
	HP SA-P400 and SA-E500 24 In Battery Cable Kit	417836-B21
	NOTE: This option kit contains a 24" battery cable and adhesive material for installing a battery into the server if a Smart Array P400 or Smart Array E500 is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.	
	HP Smart Array P400 Controller	
	HP Smart Array P400/256MB Controller	405132-B21
	HP Smart Array P400/512MB Controller with BBWC	411064-B21
	NOTE: When ordering a Smart Array P400 Controller with BBWC the addition of the HP SA-P400 and SA-E500 24" Battery (417836-B21) is required.	
	HP SA-P400 and SA-E500 24 In Battery Cable Kit	417836-B21
	NOTE: This option kit contains a 24" battery cable and adhesive material for installing a battery into the server if a Smart Array P400 or Smart Array E500 is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.	
	HP Smart Array P800 Controller	
	HP Smart Array P800/512 BBWC Controller	381513-B21
	Optional Upgrades	
	512 MB Battery-backed write cache upgrade	405148-B21
	Battery-backed write cache upgrade	383280-B21

Additional Options

	Internal SAS/SATA Cable NOTE: If selecting more than 4 hard drives or if using SAS hard drives a Smart Array controller is required and two SAS/SATA cables. NOTE: The addition of a Smart Array Controller requires the addition of a SAS/SATA Multi-lane cable.	464830-B21
	SAS HBA	
	HP SC44Ge Host Bus Adapter NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/12617_na/12617_na.html (SC44Ge HBA)	416096-B21
	SCSI HBA	
	HP SC11Xe Host Bus Adapter NOTE: Recommended HBA for SCSI tape drive connect. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html (SCSI HBA) NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html (SCSI HBA) http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.html (Smart Array E200 Controller) http://h18000.www1.hp.com/products/quickspecs/12700_na/12700_na.html (Smart Array E500 Controller) http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.html (Smart Array P400 Controller) http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.html (Smart Array P800 Controller)	412911-B21
Tape Storage	NOTE: For the complete listing of Tape Drive offerings, please see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html	
	Tape Drives	
	USB Rack-Mount Tape Solutions	
	HP StorageWorks 1U USB Rack-Mount Kit with one DAT 160 USB Tape Drive NOTE: Pre-configured with one DAT 160 USB tape drive.	AG703A
	SAS Rack-Mount Tape Solutions NOTE: HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.	
	HP StorageWorks 1U SAS Rack-Mount Kit with one LTO-4 Ultrium 1760 NOTE: Pre-configured with one LTO-4 Ultrium 1760 SAS tape drive.	EH946A
	HP StorageWorks 1U SAS Rack-Mount Kit NOTE: Supports up to (2) half-height SAS tape drives.	AE459A

HP StorageWorks DAT 160 SAS Internal Tape Drive NOTE: Mounts inside the 1U SAS Rack-Mount Kit (AE459A)	Q1587A
HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive NOTE: Mounts inside the 1U SAS Rack-Mount Kit (AE459A)	DW085A
HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive NOTE: Mounts inside the 1U SAS Rack-Mount Kit (AE459A)	EH847A
SCSI Rack-Mount Tape Solutions NOTE: SCSI Controller required. HP recommends purchasing the HP SC11Xe HBA (412911-B21) for a dedicated SCSI HBA for tape.	
HP StorageWorks 1U SCSI Rack-mount kit with one LTO-2 Ultrium 448 SCSI Tape Drive (Carbonite) NOTE: Pre-configured with one LTO-2 Ultrium 448 SCSI tape drive.	DW028B
HP StorageWorks 1U SCSI Rack-mount kit with one LTO-3 Ultrium 920 NOTE: Pre-configured with one LTO-3 Ultrium 920 SCSI tape drive.	EH903A
HP StorageWorks 3U SCSI Rack-Mount with 1 LTO-4 Ultrium 1840 Tape Drive NOTE: Pre-configured with one LTO-4 Ultrium 1840 SCSI tape drive.	EH926A
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.html	
For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: http://www.hp.com/go/connect.	
Tape Autoloaders	
HP StorageWorks DAT Autoloader	
HP StorageWorks DAT 72x10 tape autoloader	AE313B
HP StorageWorks 1/8 G2 Tape Autoloader	
HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader	AK377A
HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader	AH558A
HP StorageWorks 1/8 LTO-2 Ultrium 448 G2 Tape Autoloader	AH164A
HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions.	AH166A
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://www.hp.com/go/automation needed to create a complete solution; reference current compatibility information at: http://www.hp.com/go/ebs.	
Tape Libraries	
HP StorageWorks MSL2024 Tape Library	
HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ033A
HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Drive Library	AK378A
HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 SCSI Drive Library	AG115A
HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library	AH559A
HP StorageWorks MSL2024 1 LTO-2 Ultrium 448 SCSI Drive Library	AG116A
HP StorageWorks MSL4048 Tape Library	
HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ035A
HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library	AK380A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 SCSI Drive Library	AG322A

	HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library	AH560A
	HP StorageWorks MSL4048 1 LTO-2 Ultrium 448 SCSI Drive Library	AG320A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://www.hp.com/go/automation needed to create a complete solution; reference current compatibility information at: http://www.hp.com/go/ebs.	
Disk-Based Backup	**RDX Removable Disk Backup**	
	HP StorageWorks RDX160 External Removable Disk Backup System NOTE: 160GB of Disk Storage.	AJ766A
	HP StorageWorks RDX320 External Removable Disk Backup System NOTE: 320GB of Disk Storage.	AJ768A
	HP StorageWorks RDX500 External Removable Disk Backup System NOTE: 500GB of Disk Storage.	AJ935A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13036_na/13036_na.html	
	HP D2D Backup System	
	HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit NOTE: 2TB of Disk Storage.	EH924A
	HP StorageWorks D2D130 Backup System with LTO-3 Ultrium 920 SAS Tape Drive NOTE: 3TB of Disk Storage.	EH952A
	HP StorageWorks D2D2503i Backup System NOTE: 3TB of Disk Storage.	EH945A
	HP StorageWorks D2D2504i Backup System	EJ002A
	HP StorageWorks D2D4004i Backup System NOTE: 4.5TB of Disk Storage.	EH938A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://www.hp.com/go/d2d	
StorageWorks Options	**StorageWorks Fibre Channel HBA**	
	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html.	
	Brocade Fibre Channel HBAs	
	HP 81B PCIe 8Gb FC Single Port HBA	AP769A
	HP 82B PCIe 8Gb FC Dual Port HBA	AP770A
	HP 41B PCIe 4Gb FC Single Port HBA	AP767A
	HP 42B PCIe 4Gb FC Dual Port HBA	AP768A
	Emulex Fibre Channel HBAs	
	HP StorageWorks FC2143 4Gb PCI-X 2.0 HBA	AD167A
	HP StorageWorks FC2243 4Gb PCI-X 2.0 DC HBA	AD168A
	HP StorageWorks FC2142SR 4Gb PCI-E HBA	A8002A
	HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-E HBA	A8003A
	QLogic Fibre Channel HBAs	

	HP StorageWorks FC1142SR 4Gb PCI-E HBA	AE311A
	HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-E HBA	AE312A
	HP StorageWorks 4Gb PCI-X 2.0-to-Fibre Channel HBA	AB429A
	HP StorageWorks 4Gb PCI-X 2.0 DC-to-Fibre Channel HBA	AE369A
HP StorageWorks Modular Smart Array	**MSA SAN Storage Arrays**	
	HP StorageWorks 20 Modular Smart Array	335921-B21
	NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11942_na/11942_na.html	
	HP StorageWorks 50 Modular Smart Array	364430-B21
	NOTE: Rack-mountable 10 SFF drive enclosure with single I/O module, redundant hot plug power supplies and hot plug fans. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.html	
	HP StorageWorks 60 Modular Smart Array	418408-B21
	NOTE: Rack-mountable 12-drive (3.5" 3G SAS/1.5G SATA) 2U enclosure with 3Gb/s SAS host connectivity and redundant power supplies. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12627_na/12627_na.html	
	HP StorageWorks 70 Modular Smart Array	418800-B21
	NOTE: Rack-mountable 25-drive (2.5" 3G SAS/1.5G SATA) 2U enclosure with 3Gb/s SAS host connectivity and redundant power supplies. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12652_na/12652_na.html	
Uninterruptible Power Systems	**HP Tower UPS**	
	HP T1000v Uninterruptible Power System	
	HP T1000v UPS	AF443A
	NOTE: Please see QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13130_na/13130_na.html	
	HP Rack-mountable UPS	
	HP R1500 G2 UPS	
	HP R1.5 VA 1U UPS	AF419A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12507_na/12507_na.html	

Additional Options

HP Rack Series	HP Rack Series10000 G2 Series (Carbon/Graphite Metallic)	
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A
	NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.html	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
HP Rack Options	HP KVM Switch Options	
	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	NOTE: Requires PS/2 and one USB port on server.	
	HP Server Console Switch (KVM), 0 x 2 x 8 port	AF616A
	HP Server Console Switch (KVM), 0 x 2 x 16 port	AF617A
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	HP 1x4 Console Switch	AF611A
	HP PS2 Server Console Cable, 6 foot, 2-Pack	AF612A
	HP USB Server Console Cable, 6 foot, 2-Pack	AF613A
	NOTE: required for supporting USB peripherals.	
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	HP Serial Console Server Options	
	HP 16 Port Serial Console Server	AF101A
	HP 48 Port Serial Console Server	AF102A
	Serial Adapter, RJ45-D89 DCE Female, 1-pack	AF103A
	Serial Adapter, RJ45-D89 DCE Female, 8-pack	AF110A
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	
	Rack Kits	
	HP Rack Cable Management Velcro Clips	379820-B21

Additional Options

USB Options	USB 1.44-MB External Diskette Drive	DC141B
	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	HP Keyboard (USB) standard 2004	DT528A#ABA
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
	HP USB Internal Cable Kit	451363-B21
Service and Support Offerings (HP Care Pack Services)	**Hardware Services 4-Hour On-site Service**	
	13-Hour x 5-Day Coverage, 3 Years, Electronic	UH271E
	24-Hour x 7-Day Coverage, 3 Years, Electronic	UH272E
	Hardware Services Next Business Day On-Site Service	
	9-Hour x 5-Day Coverage, 3 Years, Electronic	UH270E
	Hardware Services 6-Hour Call to Repair On-Site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UH273E
	Hardware Installation, Electronic	UH301E
	NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack.	

Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

HP ProLiant DL180 G5 (all models)

Standard Memory

1 GB (1 x 1 GB) PC2-5300 Registered DIMM memory, with Advanced ECC Capabilities Memory installed.

Maximum Memory

Up to 24 GB memory is available with the optional installation of PC2-5300 Registered DIMM memory kits.

NOTE: Memory should be installed in pairs and matched for optimum performance.

NOTE: Chart does not represent all possible memory configurations.

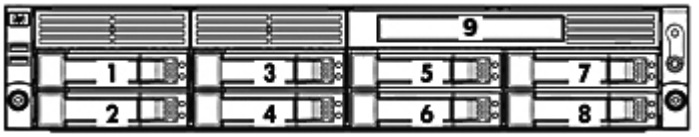
NOTE: Only 2 dual rank 8GB kits can be populated.

Memory	Slot					
	1*	2*	3	4	5	6
Standard (1 GB)	1 GB	Empty	Empty	Empty	Empty	Empty
Maximum (24 GB)	8 GB	8 GB	2 GB	2 GB	2 GB	2 GB
* Indicates the right most DIMM slots when looking from the front.						

Following are memory options available from HP:

1 GB REG PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
1 GB REG PC2-5300 1 x 1 GB Kit	462483-B21
2 GB REG PC2-5300 2 x 1 GB Low Power Single Rank Kit	483399-B21
2 GB REG PC2-5300 2 x 1 GB Single Rank Kit	408851-B21
4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit	408853-B21
4 GB REG PC2-5300 2 x2 GB Kit, Low Power, Single Rank Kit	461840-B21
8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit	408854-B21
8 GB REG PC2-5300 2 x 4 GB Low Power Dual Rank Kit	483403-B21

NOTE: Dual Rank DIMMs are supported in slots 1 to 4.



1-8 Eight 3.5" Hot Plug SAS/SATA Hard Drive Bays

9 DVD-ROM, DVD RW

Drive Support

Removable Media

	Quantity Supported	Position Supported	Controller
DVD-ROM	Up to 1	9	Integrated IDE (ATAPI) (optional)
DVD RW	Up to 1	9	Integrated IDE (ATAPI) (optional)

Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

SATA Hot Plug 3.5" Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
1TB 3G SATA 7.2K 750GB 3G SATA 7.2K 500GB 3G SATA 7.2K 250GB 3G SATA 7.2K	Up to 8 with 8 drive cage	1-8	HP Smart Array E200/128 BBWC Controller HP Smart Array P400/256MB Controller HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller HP SC11Xe Host Bus Adapter
	Up to 12 with 12 drive cage	1-12	

SATA Hot Plug 3.5" Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
160GB 3G SATA 7.2K	Up to 8 with 8 drive cage	1-8	HP Smart Array E200/128 BBWC Controller HP Smart Array P400/256MB Controller HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller HP SC11Xe Host Bus Adapter
	Up to 12 with 12 drive cage	1-12	

SAS Hot Plug 3.5" Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
1TB 3G SAS 7.2K 750GB 3G SAS 7.2K	Up to 8 with 8 drive cage	1-8	HP Smart Array E200/128 BBWC Controller HP Smart Array P400/256MB Controller HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller HP SC44Ge Host Bus Adapter NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. NOTE: Transfer rate 1.5 Gb/s SATA, 3 Gb/s SAS HP SC11Xe Host Bus Adapter
	Up to 12 with 12 drive cage	1-12	

Storage

SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD 120GB 3.0G SATA SSD	Up to 8 with 8 drive cage	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P800/512 BBWC Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller

SAS Hot Plug 3.5" Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
600GB 6G 15K 450GB 6G 15K 450GB 3G 15K 300GB 6G 15K 300GB 3G 15K 146GB 3G 15K	Up to 8 with 8 drive cage	1-8	HP Smart Array E200/128 BBWC Controller HP Smart Array P400/256MB Controller HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller HP SC44Ge Host Bus Adapter NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. NOTE: Transfer rate 1.5 Gb/s SATA, 3 Gb/s SAS HP SC11Xe Host Bus Adapter
	Up to 12 with 12 drive cage	1-12	

External Storage

	Quantity Supported	Position Supported	Controller
HP Storageworks MSA20 Enclosure	Up to 2 per SA 6402 Up to 4 per SA 6404	External	Smart Array 6402 Controller Smart Array 6404 Controller
HP Storageworks MSA50	Up to 2	External	HP Smart Array E500/256MB Controller HP Smart Array P800 Controller HP Smart Array P600 Controller
HP Storageworks MSA60	Up to 8 per SA P800	External	HP Smart Array E500/256MB Controller HP Smart Array P800 Controller HP Smart Array P600 Controller
HP Storageworks MSA70	Up to 4 per SA P800	External	HP Smart Array E500/256MB Controller HP Smart Array P800 Controller HP Smart Array P600 Controller

Tape and Disk-Based Backup

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following: http://h18000.www1.hp.com/products/quickspecs/north_america/10233.html

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders & Tape Libraries listed below, please see the following: http://h18000.www1.hp.com/products/quickspecs/north_america/10809.html

NOTE: For complete listing of tape drive offerings see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html

NOTE: SAS Tape Drives: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives, External LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-2 Ultrium 460 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 DLT VS160 SDLT 600 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks USB Tape Drives, External DAT 40 USB DAT 72 USB DAT 160 USB 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Tape Drives, External DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS LT0-4 Ultrium 1760 SAS LTO-4 Ultrium 1840 SAS 1U Rack-Mount Kit	External	HP SC44Ge Host Bus Adapter	416096-B21

Storage

HP StorageWorks SCSI Tape Automation, External DAT 72x10 Autoloader 1/8 G2 Tape Autoloader MSL2024 MSL4048	External	HP SC11Xe Host Bus Adapter	412911-B21
		HP U320e SCSI Host Bus Adapter NOTE: Recommended for MSL tape libraries.	AH627A
HP StorageWorks SAS Tape Automation, External 1/8 G2 Autoloader MSL2024 MSL4048	External	HP SC44Ge Host Bus Adapter NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	416096-B21
HP StorageWorks Fibre Tape Automation, External MSL2024 MSL4048	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for detailed connectivity information.	N/A
HP StorageWorks RDX Removable Disk Backup System RDX160 RDX320 RDX500	External	USB 2.0 Port	N/A
HP StorageWorks D2D Backup Systems D2D120 D2D130 D2D2503i D2D2504i D2D4004i	External	Embedded Network Controller	N/A

Power Specifications

750W Power Supply Spare Kit	451366-291, B21
Operational Input Voltage Range (Vrms)	90Vac to 264Vac full range
Frequency Range (Nominal) (Hz)	47 Hz to 63 Hz

Nominal Input Voltage (Vrms)	100	115	200	220	230	240
Max Rated Output Wattage Rating	750	750	750	750	750	750
Nominal Input Current (A rms)	9.1	7.9	4.3	4.0	3.8	3.7
Max Rated Input Wattage Rating (Watts)	893	888	872	862	862	862
Max. Rated VA (Volt-Amp)	911	906	890	880	880	880
Efficiency (%)	84	84.5	86	87	87	87
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	<0.43	<0.50	<.0.90	<0.96	<1.00	<1.04
Maximum Inrush Current (A peak)	30A	30A	30A	30A	30A	30A
Maximum Inrush Current Duration (mS)	5mS	5mS	5mS	5mS	5mS	5mS

System Unit	Dimensions (H x W x D) (with bezel)		3.44x 17.64 x 27.50 in (8.75 x 44.80 x 69.88cm)
	Weight (approximate)	Maximum (all hard drives, power supplies and processors installed)	51.5 lb (19.22 kg)
		Minimum (one hard drive, power supply and processor installed)	35.0 lb (13.06 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 - 240 VAC
		Rated Input Current	9.10 A (at 100 VAC), 4.5 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	910 W (at 100 VAC), 900 W (at 200 VAC)
	BTU Rating	Maximum	3107.82 BTU/hr (at 100 VAC), 3073.67 BTU/hr (at 200 VAC)
	Power Specifications		To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls • Click on the system of interest. Example: DL180 G5 • Follow the instructions of the next screens.
	Power Supply Output (per power supply)	Rated Steady-State Power	750 W (at 100 VAC), 750 W (at 200 VAC)
		Maximum Peak Power	750 W (at 100 VAC), 750W (at 200 VAC)
	System Inlet Temperature	Operating	50° to 95°F (10° to 35°C) at sea level with an altitude derating of 1.8°F per every 1000 ft (1.0°C per every 305 m) above sea level to a maximum of 10,000 ft (3050 m), no direct sustained sunlight. Maximum rate of change is 18°F/hr (10°C/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 86°F (30°C).
		Non-operating	-22° to 140° F (-30° to 60° C). Maximum rate of change is 36° F/hr (20° C/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 82.4° F (28° C) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 101.7° F (38.7° C) maximum wet bulb temperature, non-condensing.

	Altitude	Operating	10,000 ft (3050 m). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1500 ft/min (457 m/min).
		Non-operating	30,000 ft (9144 m). Maximum allowable altitude change rate is 1500 ft/min (457 m/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
		Idle	
		L_{WAd}	6.7 B
		L_{pAm}	51 dBA
		Operating	
		L_{WAd}	6.7 B
		L_{pAm}	51 dBA
	Emissions Classification (EMC)	FCC Rating	A
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
		NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	

Embedded NC105i PCIe Gigabit Server Adapter (Embedded)	Network Interface Compatibility	Integrated 10/100/1000BASE-T Transceiver Combines a triple-speed IEEE 802.3TM - Compliant Media Access Controller (MAC) with a triple-speed Ethernet transceiver.	
	Data Transfer Method	Compliant to x1 PCIe Specification	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	Performs all the physical layer functions for 10BASE-T, 100BASE-T, and 1000BASE-T Ethernet on standard Category 5 UT	

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.